

REMARKS

Applicants have studied the Office Action dated December 15, 2005 and have made amendments to the claims. No new matter has been added by these amendments. It is submitted that the application, as amended, is in condition for allowance. The Applicants have added new dependent claim 33. By virtue of this amendment, claims 1-26 and 33 are pending. Reconsideration and allowance of the pending claims in view of the above amendments and the following remarks are respectfully requested.

New Dependent claim 33

The Applicants have added new dependent claim 33 to more completely describe the presently claimed invention. Support for this amendment is found in the specification at, for example, page 36, lines 3-4. No new matter has been added by this amendment.

Rejection under 35 U.S.C. §101

The Examiner rejected claims 1-7 and 20-22 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

The Applicants have amended claims 1-7 and 20-22 to more specifically specify that the recited processing steps are each performed "with an electronic processor." With regards to the rejected machine implemented method claims, the Applicants assert that the process of these claims includes a useful and tangible result that certainly has industrial applicability.

More specifically, the machine implemented method of, for example, claim 1 accepts two elements of a finite field and transforms those two elements by performing operations on those two elements to produce a "multiplier output." The other independent machine implemented method claims similarly produce a "multiplier output" or a multiplicative product." The Applicants specification itself points out

exemplary practical applications for multiplying two elements of a finite field to produce a multiplier output. These practical applications include "generation of error correction codes or encryption codes for digital data transmission." Specification, page 3, first paragraph. These machine implemented methods, which include processing steps tied to an electronic processor, are not preempting "ideas, laws of nature or natural phenomena." See, MPEP §2106(IV)(A).

The Applicants points out that practical error corrections and data encryption systems that today are routinely incorporated in many data communications and data storage devices depend upon an efficient and practical method to perform multiplication of finite field elements in an automated manner. A few decades ago, prior to the development of processing hardware able to perform the automated processing of today's data communications and storage devices, error correction and data encryption were limited to relatively very low data throughput rates. The capability to perform a machine implemented method to multiply two elements of a finite field, as is set forth by claims 1-7 and 20-22, enables the realization of practical error correction and data encryption systems. Newly added dependent claim 33, which depends from claim 1, more completely describes the transformative processing performed by the claimed method. The Applicants therefore assert that the transformation of the "two input operands accepted by the electronic processor" into the "multiplier output" or "multiplicative product" that is produced by the presently claimed machine implemented method of the present invention produces a useful, concrete and tangible result.

The Applicants assert that the practical data transformation performed by the present invention, as set forth by machine implemented method claims 1-7 and 20-22, are comparable to the examples of court precedent recited in the MPEP, namely:

- Claims drawn to a long-distance telephone billing process containing mathematical algorithms were held to be directed to patentable subject matter because "the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle." AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1358, 50 USPQ2d 1447, 1452

(Fed. Cir. 1999);

- "[T]ransformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result' -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601

MPEP § 2106(II)(A). The Applicants assert that the machine implemented method claims of the presently claimed invention are not solely the "manipulation of an abstract idea," but rather a practical process to produce tangible, useful results. The Applicants assert that it is clear that the machine implemented method of the present invention is a useful improvement over, for example, performing finite field multiplication by hand.

The Applicants therefore respectfully assert that the rejection of these claims under 35 U.S.C. §101 should be withdrawn.

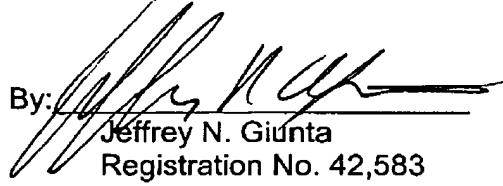
Conclusion

If for any reason the Examiner finds the application other than in condition for allowance, or the Examiner believes that there are any informalities which can be corrected by Examiner's amendment, a telephone call to the undersigned at (561) 989-9811 is respectfully solicited.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim.

Respectfully submitted,

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